



INFORMATION FOR FARM WORKERS

Cholinesterase Monitoring for Pesticide Handlers

What is happening?

A new Department of Labor & Industries rule (WAC 296-307-148) requires agriculture employers to provide blood testing to workers who handle pesticides that can lower “cholinesterase” in the body.

What is cholinesterase?

Cholinesterase is a protein in the body that acts as the nervous system’s “off switch” and helps to make the nervous system work properly.

Which pesticides lower cholinesterase?

Organophosphate and carbamate pesticides can lower cholinesterase levels. Examples of organophosphate and carbamate pesticides commonly used in Washington State include azinphos-methyl (Guthion), chlorpyrifos (Lorsban), carbaryl (Sevin), diazinon, and phosmet (Imidan).

What happens when cholinesterase levels are low?

You could become ill from overexposure to organophosphate or carbamate pesticides. Overexposure could occur through such actions as not wearing a respirator when required or not washing after applying pesticide. In most cases, decreases in cholinesterase of up to 50% do not cause illness. However, workers with low cholinesterase levels could become sick if pesticide exposure continues. Symptoms can include headaches, diarrhea, dizziness, blurred vision, difficult breathing, unconsciousness, and even death.

How does the cholinesterase monitoring program work?

The new rule requires employers to record all hours that a worker handles (mixes, loads, applies) organophosphate or carbamate pesticides with the words “DANGER” or “WARNING” on the label. Workers who handle these pesticides for 50 or more hours in any 30-day period (for 30 hours in 2005) must participate in a cholinesterase monitoring program. The monitoring program includes:

- A discussion with a health care provider about cholinesterase testing;
 - A decision by the worker to participate or not participate in the blood testing (The employer **MUST NOT** discourage the worker from participating in the blood testing);
 - A blood test taken **BEFORE** the worker is exposed to pesticides, to determine his normal (*baseline*) cholinesterase level;
- AND
- Blood tests taken when the worker handles these pesticides for 50 or more hours (30 hours in 2005) in a 30-day period. These tests will tell whether the worker’s cholinesterase levels have dropped.

What is the blood test for?

When a blood sample is taken, two types of cholinesterase are measured: plasma and the red blood cell cholinesterase. The first test is your personal baseline and each test after that is compared to the baseline to see if there has been a change.

- If your cholinesterase level is low enough to suspect pesticide overexposure then your employer must review your work to try and find out how you are being exposed and then correct these problems;

OR

- If your cholinesterase level is very low then you must also be temporarily removed from handling these pesticides and from other possible exposures, such as harvesting or thinning, until your cholinesterase returns to a safe level.

How do I know what level is too low?

- If your red blood cell or plasma cholinesterase levels are lower than **20%** of your baseline level, your employer must review your pesticide handling practices to try and find out how exposures are occurring and make corrections.
- If your red blood cell cholinesterase level is **30% lower** or your plasma cholinesterase level is **40% lower** than your baseline level, your employer must remove you from handling and other possible exposures to cholinesterase-inhibiting pesticides.

In both situations, the employer has to pay your full salary, maintain your seniority and benefits until your cholinesterase level gets back to normal or for three months, which ever comes first. You have the right to ask for your cholinesterase test results from the employer, clinic or doctor who did the exam.

What happens with the cholinesterase test information?

Your employer receives a report from the doctor that indicates if your cholinesterase is too low. Your employer will review your work and figure out the problem and, if needed, temporarily remove you from working with the pesticides. Your employer may request your actual test results from the doctor and the results will be provided to you also. The Department of Health and L&I would also receive the results in order to ensure that employers are following the rule.

What are the benefits of having a cholinesterase-monitoring program?

The program will identify workers who have been overexposed to pesticides and remove workers from further exposure before they become poisoned.

Who pays for the cost of the cholinesterase testing?

Your employer pays all costs of the program. This includes all medical, travel, and training costs.

Questions?

L&I has a publication titled "Jorge's New Job" that describes the cholinesterase monitoring rule and medical testing program. To get a copy of "Jorge's new Job" or for any other questions contact your local L&I office.

Region 1 (Island, San Juan, Skagit, Snohomish, and Whatcom counties): **452-290-1431**

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